

II. REMARKS

The Second Office Action on the merits in this application, dated June 19, 2007 (hereinafter “Second Office Action”), and the references cited therein have been carefully reviewed; this amendment is intended to be fully responsive to the Second Office Action. Claims 1-22 are pending in the application, with claims 17-22 having been withdrawn from consideration, without prejudice. All remaining claims, i.e., claims 1-16, presently stand rejected. Responsively, Applicants have amended claims 1, 2, 4-6 and 11, and cancelled claims 3 and 12. After entering this amendment, claims 1, 2, 4-11 and 13-22 remain pending. Reconsideration and reexamination of this application in view of the above amendments and the following remarks is herein respectfully requested.

A. RESPONSE TO ARGUMENTS

Applicants have reviewed the Examiner’s “Response to Arguments” section, and acknowledge that Applicants’ arguments with respect to claims 1-16, entered March 23, 2007, have been evaluated, “but are [considered] moot in view of the new ground(s) of rejection.” Second Office Action, at 5, Item No. 8.

B. CLAIM REJECTIONS - 35 U.S.C. § 103

Claims 1, 8-12 and 14-16 are presently rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publ. No. 2002/0019280 A1 to Brown (hereinafter “Brown”) in view of U.S. Patent No. 6,367,151 B1 to Schlegel et al. (hereinafter “Schlegel”). In addition, dependent claims 3 and 12 are similarly rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown in view of Schlegel and Allen, and further in view of European Patent No. EP 10209246 to Knepper et al. (hereinafter “Knepper”). Finally, dependent claims 7 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown and Schlegel as applied to claim 1 above, and further in view of U.S. Patent No. 5,714,205 to Marantz et al. (hereinafter “Marantz”). Responsively, Applicants have amended claims 1, 2, 4-6 and 11, and cancelled claims 3 and 12.

In rejecting base claims 1 and 11, the Examiner states, in part, that “Brown discloses a transmission (300) comprising a housing (308) having a bore (not labeled), a bearing (334a, 408a) within the bore”, and properly notes, however, that “Brown fails to disclose the bore

includes a thermal spray coating.” Second Office Action, at 2, Item No. 2. In light of the highlighted deficiencies of Brown, the Examiner notes that Schlegel “discloses a bore of a connecting rod (1) [that] is plasma coated (thermal spray coating)”, and therefore finds that “it would have been obvious to one of ordinary skill in the art … to modify the bore of the housing of Brown so that the bore includes a layer of thermally [sic] spray coating in view of Schlegel et al.”. Id. In response, Applicants have amended claims 1 and 11 recite subject matter that is patentably distinguishable from the prior art of record. More specifically, Applicants have cancelled claim 3, the elements and limitation originally recited therein having been amended into base claim 1. Similarly, Applicants have cancelled claim 12, the elements and limitation originally set forth therein having been amended into base claim 11. Amended claims 1 and 11 now similarly recite a transmission assembly comprising:

an aluminum housing member having a bore formed therein; … wherein said bore includes a layer of thermal spray coating for improved wear resistance so that the bore supports [a] bearing without a steel sleeve therebetween; wherein said thermal spray comprises a steel alloy, having 0.1 to 1% weight C, 0 to 14% weight Cr, 0 to 2% weight Mn, 0 to 2% weight Ni, 0 to 1% weight Si, and the balance Fe. (Emphasis added.)

If the Examiner is to properly maintain the obviousness rejection of claims 1 and 11 under §103(a), the prior art references of record must be shown to teach or suggest each and every element and limitation of the amended claims. See, e.g., MPEP § 2143.

With regard to the elements and limitations originally presented in dependent claims 3 and 12, which have been respectively amended into claims 1 and 11, the Examiner recognizes that both Brown and Schlegel fail to disclose a thermal spray coating comprising a steel alloy. See, Second Office Action, at 3, Item No. 4; at 4, Item No. 5. Consequently, the Examiner thereafter notes that the Knepper reference discloses a thermal spray coating “comprising steel alloy made from 24-35% Cr, 2-9% Si, 1-4% Mn, up to 0.15 C up to 30%Ni and the balance Fe”. Id. Acknowledging that “Knepper et al. fail to disclose the exact values as claimed”, the Examiner erroneously states that “it would have been obvious to one of ordinary skill in the art … to select the steel alloy as claimed”, premised on the mistaken assertion that the Federal Circuit in the case of In re Boesch, 617 F.2d 272 (CCPA 1980), “held that discovering an optimum value of a result effect variable involves only routine skill in the art.” Id., at 4.

Contrary to the Examiner’s statement, the Court in Boesch held that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of

the art.” 617 F.2d at 276 (emphasis added.) In order for Applicants’ claimed ranges “to be deemed the result of obvious experimentation, any such experimentation must have come from within the teachings of the art.” In re Waymouth, 499 F.2d 1273, 1275 (CCPA 1974) (emphasis added). In accordance with these judicial requirements, the holding of the Boesch Court is expressly premised on the fact that “lowering the [challenged parameter] value … [is] expressly suggested” in the cited prior art references, and “the composition requirements of the claims and the cited references overlap”. Id. The decision of In re Boesch is not applicable to the captioned application.

In stark contrast to the references cited in In re Boesch, the prior art of record herein, i.e., Brown, Schlegel, and Knepper, whether considered individually or as combined, fail to expressly or impliedly suggest that lowering the range of acceptable Silicon and Chromium in the steel alloy thermal spray coating, i.e., as set forth in amended claims 1 and 11 relative to the composition in Knepper, “is ordinarily within the skill of the art”. Also of tantamount importance, the ranges disclosed in Knepper do not overlap with Applicants rejected claims. Finally, the Knepper composition does not recite a thermal spray coating comprising “a steel alloy having 0.1 to 1% weight C, 0 to 14% weight Cr, 0 to 2% weight Mn, 0 to 2% weight Ni, 0 to 1% weight Si, and the balance Fe”, as recited by Applicant. Rather, the Knepper composition, in addition to requiring 24 to 35 Gew. - % chrome, 2 to 9 Gew. - % silicon, 1 to 4 Gew. - % manganese, to 0.15 Gew. - % Carbon, to 30 Gew. - % nickel, also requires “0.5 to 3 Gew. - % boron, … 0.5 to 8 Gew. - % molybdenum, … and the remainder, at least however 10 Gew. - % iron”. Kneppe, at 2. Accordingly, Applicants’ claimed invention cannot be characterized as the optimization of a result effective variable in a known process because: (a) there is no teaching in the prior art references of record that the variables here involved are “known to be result effective”, and (b) there is no overlap in ranges between Knepper and Applicants’ claims 1 and 11.

In view of the amendments and corresponding remarks set forth above, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejections of base claims 1 and 11, and any claims depending therefrom, based in whole or in part upon the Brown, Schlegel and Knepper references.

Claims 2, 4, and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown and Schlegel as applied to claim 1, and further in view of U.S. Patent No. 6,435,830 B1 to Allen et al.

In rejecting claim 5, it is believed that the Examiner meant to state that Brown and Schlegel fail to disclose all of the elements and limitations of claim 5, and therefore purports to modify Brown and Schlegel to include the first coating composition disclosed in Table 2 of Allen. See, Second Office Action, at 3, Item No. 3. Notably, claim 5 has been rewritten into independent form and amended to include all of the elements and limitations of independent claim 1. More specifically, claim 5 now recites:

A transmission comprising: an aluminum housing member having a bore formed therein; a rotatable member supported on a bearing within the bore; and wherein said bore includes a layer of thermal spray coating for improved wear resistance so that the bore supports the bearing without a steel sleeve therebetween; wherein said thermal spray coating comprising a nickel alloy having 15 to 25% weight Cr, 0 to 20% weight Al, 0 to 5% Y, and the balance Ni. (Emphasis added.)

Although Allen does recite a coating composition with 10-40 wt % Cr, 5-35 wt % Al, 0-2 wt % Y, 0-7 wt % Si, 0-2 % Hf, and the balance Ni Co, Allen does not disclose “a nickel alloy having 15 to 25% weight Cr, 0 to 20% weight Al, 0 to 5% Y, and the balance Ni”. Accordingly, the 103(a) rejection of claim 5, and thus amended claim 4 as depending therefrom, is overcome.

In view of the remarks set forth above, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of amended claims 4 and 5 based upon the Brown, Schlegel and Allen references.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown and Schlegel, and further in view of Netherlands Patent No. KR 2005065911A to Kim et al (hereinafter “Kim”). Applicants respectfully point out that the Kim reference is improper prior art upon which to base a rejection of Applicants’ claim 6. The earliest date of publication of the Kim reference is June 30, 2005. Applicants note that the captioned application was filed on October 24, 2003, which precedes the critical reference date of Kim as a foreign printed publication. Accordingly, the pending 103(a) rejection of claim 6 is improper and should therefore be withdrawn.

III. CONCLUSION

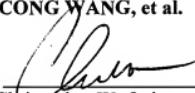
In light of the amendments and corresponding remarks set forth above, this paper is believed to be fully responsive to the Second Office Action, dated June 19, 2007. No new matter is being introduced through the proposed amendments set forth herein. As such, the amendments and remarks in support of the rejected claims are believed to place this application in condition for allowance, which action is respectfully requested. In the event formal matters remain, the Examiner is invited to call the undersigned to discuss those matters before further action is taken.

Please charge any fees associated with this amendment to deposit account 07-0960.

Respectfully submitted,

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